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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bassel Beidas

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EXAMINER

MURPHY, RHONDA L

ART UNIT

PAPER NUMBER

2667

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/768,726	BEIDAS ET AL.	
	Examiner	Art Unit	
	Rhonda Murphy	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7,16,22-25,30-33,42 and 48-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-25,48-51 and 56-58 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,16,30-33,42 and 52-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This communication is responsive to the amendment filed on May 27, 2005. Accordingly, claims 2, 17 and 43 have been canceled (claims 4, 8-15, 18-21, 26-29, 34-41 and 44-47 have been previously canceled), claims 52-58 were added and claims 1-3, 5-7, 16, 22-25, 30-33, 42 and 48-58 are currently pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 52 - 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Dent (US 6,023,477).

Regarding claims 52 and 54, Dent teaches a method of communicating in a wireless network, the method comprising: generating a downlink signal including a beacon signal and data (Fig. 1, col. 1, lines 13-22), wherein portions of the beacon signal are provided in a plurality of frames of the downlink signal (Fig. 1, col. 1, lines 10-22); and transmitting the downlink signal over a signal carrier to a terminal (col. 4, lines 3-6),

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wherein the terminal utilizes the beacon signal to derive frequency and timing information for generating an uplink signal (col. 3-6).

Regarding claims 53 and 55, Dent teaches each of the frames including a beacon slot including one of the portions of the beacon signal (Fig. 1, col. 6, lines 5-14), the one portion including a unique word sequence (col. 6, lines 24-30) and frame position information (col. 6, lines 61-66).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 5-6, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura (US 6,493,360) in view of Dent (US 6,023,477).

Regarding claims 1 and 30, Nishimura teaches a system for providing synchronization in a communications network, the system comprising: a transmitter for transmitting to a first terminal (**reception circuit**, Fig. 2) a signal including a plurality of frames (col. 5, lines 33-35, Fig. 1), each of said frames including a plurality of time slots (see Fig. 1), wherein said transmitter includes control data (see Fig. 1, col. 5, lines 33-42) and data output by a second terminal in another one of the time slots (data; Fig. 1).

Although Nishimura teaches control data (beacon information) within the frame, Nishimura fails to explicitly disclose the beacon information within a time slot. However, it is known in the art for such information to be in one of the time slots.

Furthermore, Dent teaches beacon information within time slots (Fig. 1). Therefore, it would have been obvious to one skilled in the art to include beacon information within time slots of a frame, for the purpose of enabling synchronization.

Regarding claims 5 and 31, Nishimura and Dent teach a synchronization system comprising frames and time slots with beacon information and data.

Nishimura fails to explicitly teach frames within a superframe such that the start of the superframe substantially coincides with the start of one of said frames.

However, Dent teaches arranging respective groups of frames into a respective superframe (col. 6, lines 30-33).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of Nishimura, by arranging groups of frames into superframes, in order to provide a longer frame structure for frame synchronization; and further to correspond the starting of each superframe with the starting of one of the frames, since each superframe begins with one frame. Thus, coinciding the start of the frame and superframe and providing a synchronization pattern.

Regarding claims 6 and 32, Nishimura and Dent teach a system of providing a synchronization signal to a terminal, in which the frames are grouped into a superframe structure. Furthermore, Nishimura and Dent teach transmitting the start of each frame

such that it substantially coincides with the start of one of the time slots. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to correspond the starting of each frame with the start of each time slot, since each frame consist of at least one time slot and the time slot being located at the beginning of each frame.

6. Claims 3, 7 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura (US 6,493,360) and Dent (US 6,023,477), and in further view of Wakabayashi (US 6,643,342).

Regarding claim 3, Nishimura and Dent teach a synchronization system comprising frames and time slots with beacon information and data. Nishimura and Dent fail to explicitly disclose one time slot comprising a unique word signal that is substantially the same in each frame.

However, Wakabayashi teaches one time slot comprising a unique word signal that is substantially the same in each frame (Fig 4, col. 3, lines 13-20).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of Nishimura and Dent, by incorporating a unique word that is substantially the same in each frame, for the purpose of optimizing the time required to establish synchronization.

Regarding claims 7 and 33, Nishimura and Dent teach a system of providing a synchronization signal to a terminal, in which the frames are grouped into a superframe

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structure. Nishimura and Dent fail to explicitly teach the beacon information in said frames of said superframes is in the same order for each said superframe.

However, Wakabayashi teaches a portion of a synchronization signal in each frame comprising a respective phase signal (beacon information) that is unique for each respective frame within a particular superframe (Fig. 4; col. 3, lines 13-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide a repetitive sequence of beacon information for each superframe, in order to track the sequence of phase signals and establish synchronization.

7. Claims 16 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi (US 6,643,342), in view of Dent (US 6,023,477).

Regarding claims 16 and 42, Wakabayashi teaches generating a beacon information as a plurality of unique phase signals (Fig. 4, col. 3, lines 13-20); and transmitting a data signal to a terminal (data must be transmitted to its destination, in which the destination is the terminal), the data signal comprising a plurality of frames (it is known in the art that communication signals contain a plurality of frames), a portion of each frame comprising a respective one of the plurality of unique phase signals (Fig. 4; col. 3, lines 13-20), wherein the data signal further includes data from another terminal (it is known in the art that a data signal incorporates data from another terminal, since TDMA systems provides access to multiple users/terminals).

Allowable Subject Matter

8. Claims 22-25, 48-51 and 56-58 are allowed.

As to claims 56, 57, and 58 prior art fails to particularly disclose determining whether the correlation value is below a frequency acquisition threshold; determining an arrival time of a unique word signal in a first frame; determining an estimated arrival time of the unique word signal in a second frame based on the arrival time of the unique word signal in the first frame; determining a difference between the estimated arrival time and an actual arrival time; adjusting a voltage controlled oscillator (VCO) frequency based on the difference; comparing the difference with a timing acquisition threshold, and determining acquisition of the communication signal based on the comparison.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rhonda Murphy
Examiner
Art Unit 2667

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KWANG BIN YAO
PRIMARY EXAMINER
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